

grown on a solid medium, and/or of making the culture liquid cloudy when said microorganism is cultured in a transparent liquid medium.

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8. (Amended) The microorganism according to claim 1, which is selected by artificially treating a microorganism having an ability to accumulate an unsaturated fatty acid-containing lipid in the cell.

9. (Amended) The microorganism according to claim 1, which is selected by artificially treating a microorganism having an ability of accumulating an unsaturated fatty acid-containing lipid in the cell, by culturing the obtained strains on a solid medium to select strains of which colonies are covered with lipid-containing lipid vesicles at the periphery, and then by selecting those strains that make the culture liquid cloudy when said microorganism is cultured in a transparent liquid medium.

10. (Amended) The microorganism according to claim 1, which can be turned into a spheroplast or a protoplast.

12. (Amended) The microorganism according to claim 1, wherein said extracellularly secreted lipid is a lipid in which 50% or more is triglyceride.

13. (Amended) The microorganism according to claim 1, wherein said unsaturated fatty acids are arachidonic acid.

17. (Amended) The lipid vesicles according to claim 15, wherein said lipid vesicles are produced by a microorganism.

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18. (Amended) Lipid vesicles encapsulating a lipid obtained from a culture liquid prepared by culturing the microorganism according to claim 1 in a liquid medium.

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19. (Amended) The lipid vesicles according to claim 15, which can be uniformly dispersed in water or a hydrophilic substance.
20. (Amended) The lipid vesicles according to claim 15, which stably retains the lipid encapsulated within said lipid vesicles against oxidation.
21. (Amended) The lipid vesicles according to claim 15, which can be separated by centrifugation.
22. (Amended) The lipid vesicles according to claim 15, wherein the membrane of said lipid vesicles comprises sugar, protein, and lipid.
23. (Amended) The lipid vesicles according to claim 15, which has an average diameter of 0.2 to 10  $\mu\text{m}$ .
24. (Amended) The lipid vesicles according to claim 15, wherein the lipid encapsulated in said lipid vesicles is a lipid in which 50% or more is triglyceride.
25. (Amended) A lipid isolated from the lipid vesicles according to claim 15.
26. (Amended) A food, a cosmetic, or an animal feed comprising the lipid vesicles according to claim 15 added thereto.
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30. (Amended) A method of producing lipid vesicles which method comprises culturing the microorganism according to claim 1 in a liquid medium and then collecting the lipid vesicles encapsulating a lipid from the culture liquid.

31. (Amended) A method of producing lipid vesicles which method comprises continuously culturing the microorganism according to claim 1 in a liquid medium and then continuously collecting the lipid vesicles encapsulating a lipid from the culture liquid.

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32. (Amended) A method of producing a lipid which method comprises culturing the microorganism according to claim 1 in a liquid medium, collecting lipid vesicles encapsulating a lipid from the culture liquid, and separating a lipid containing fatty acids from said lipid vesicles.

33. (Amended) A method of producing unsaturated fatty acids which method comprises culturing the microorganism according to claim 1 in a liquid medium, collecting lipid vesicles encapsulating a lipid from the culture liquid, separating the lipid containing fatty acids from said lipid vesicles, and isolating the unsaturated fatty acids from said lipid.

36. (Amended) The microorganism according to claim 34, which is a filamentous fungus.

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37. (Amended) The microorganism according to claim 34, which has a property of forming lipid-containing lipid vesicles around the colonies thereof when said microorganism is grown on a solid medium, and/or of making the culture liquid cloudy when said microorganism is cultured in a transparent liquid medium.

38. (Amended) The microorganism according to claim 34 obtained by artificially treating a microorganism which has an ability of intracellularly accumulating a lipid containing fatty acids that have 18 carbons and three or more double bonds or 20 or more carbons and two or more double bonds.

39. (Amended) The microorganism according to claims 35 obtained by artificially treating a microorganism which has an ability of intracellularly accumulating a lipid containing fatty acids that have 18 carbons and three or more double bonds or 20 or more carbons and two or more double bonds, and by selecting, from the strains obtained,

strains that make the culture liquid cloudy and then separates a lipid layer when cultured in a transparent liquid medium.

40. (Amended) The microorganism according to claim 34, which can be turned into a spheroplast or a protoplast.

41. (Amended) The microorganism according to claim 34, wherein said extracellularly secreted lipid is a lipid in which 50% or more is triglyceride.

42. (Amended) A method of producing a lipid containing unsaturated fatty acids which method comprises culturing the microorganism according to claim 34 in a liquid medium and collecting the lipid from the culture liquid.

43. (Amended) A method of producing a lipid containing unsaturated fatty acids which method comprises continuously culturing the microorganism according to claim 34 in a liquid medium and then continuously collecting the lipid from the culture liquid.

45. (Amended) The screening method according to claim 74 wherein said unsaturated fatty acids have 18 carbons and three or more double bonds or 20 or more carbons and two or more double bonds.

46. (Amended) The screening method according to claim 74 wherein said microorganism is a filamentous fungus.

47. (Amended) A screening method wherein strains having a property of extracellularly secreting an unsaturated fatty acid-containing lipid are selected by artificially treating a microorganism having an ability to accumulate the unsaturated fatty acid-containing lipid in the cell, and culturing the strains obtained on a solid medium to

determine strains of which colonies are covered with lipid-containing lipid vesicles at the periphery.

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48. (Amended) A screening method wherein strains having a property of extracellularly secreting an unsaturated fatty acid-containing lipid are selected by artificially treating a microorganism having an ability to accumulate the unsaturated fatty acid-containing lipid in the cell, [by] culturing the strains obtained on a solid medium to select strains of which colonies are covered with lipid-containing lipid vesicles at the periphery, and further culturing the selected strains in a transparent liquid medium to determine strains for which the culture liquid becomes cloudy.

49. (Amended) The screening method according to claim 47, wherein said artificial manipulation is mutation treatment with N-methyl-N'-nitro-N-nitrosoguanidine (NTG).

50. (Amended) The screening method according to claim 47, wherein said artificial manipulation is mutation treatment, gene manipulation, or cell fusion.

51. (Amended) A microorganism selected by the screening method according to claim 74.

Please add new claims ~~52-80~~ as follows:

--52. The microorganism according to claim 34, wherein said unsaturated fatty

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acid is selected from the group consisting of  $\gamma$ -linolenic acid, arachidonic acid, DHA and  $\omega$ 9 highly unsaturated fatty acids.

53. The microorganisms according to claim 8, wherein said artificial treatment is selected from the group consisting of mutation, gene manipulation and cell fusion.

54. The microorganism according to claim 1, wherein at least one of a reaction in the microorganism selected from the group consisting of  $\Delta 5$  desaturation reaction,  $\Delta 6$  desaturation reaction,  $\Delta 9$  desaturation reaction,  $\Delta 12$  desaturation reaction,  $\omega 3$  desaturation reaction and chain elongation reaction is enhanced, or reduced or missing.

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55. The microorganism according to claim ~~6~~<sup>1</sup>, which has a property of forming lipid vesicles containing a lipid around the colonies when said microorganism is grown on a solid medium, and/or of making the culture liquid cloudy when said microorganism is cultured in a transparent liquid medium.

56. The microorganism according to claim 7, which is selected by artificially treating a microorganism having an ability to accumulate an unsaturated fatty acid-containing lipid in the cell.

57. The microorganism according to claim 8, which is selected by artificially treating a microorganism having an ability of accumulating an unsaturated fatty acid-containing lipid in the cell, by culturing the obtained strains on a solid medium to select strains of which colonies are covered with lipid-containing lipid vesicles at the periphery, and then by selecting those strains that make the culture liquid cloudy when said microorganism is cultured in a transparent liquid medium.

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58. The microorganism according to claim 12, wherein said unsaturated fatty acids are arachidonic acid. ~~B~~

60. Lipid vesicles encapsulating a lipid obtained from a culture liquid prepared by culturing the microorganism according to claim 55 in a liquid medium.

62. A lipid isolated from the lipid vesicles according to claim 62.

64. A food, a cosmetic, a pharmaceutical or an animal feed comprising the lipid  
 ing to claim 62 added thereto.

66. A method of producing lipid vesicles which method comprises continuously growing the microorganism according to claim 57 in a liquid medium and then continuously collecting the lipid vesicles encapsulating a lipid from the culture liquid.

67. A method of producing a lipid which method comprises culturing the microorganism according to claim 57 in a liquid medium, collecting lipid vesicles encapsulating a lipid from the culture liquid, and separating a lipid containing fatty acids from said lipid vesicles.

68. A method of producing unsaturated fatty acids which method comprises culturing the microorganism according to claim 56 in a liquid medium, collecting lipid vesicles encapsulating a lipid from the culture liquid, separating the lipid containing fatty acids from said lipid vesicles, and isolating the unsaturated fatty acids from said lipid.

69. The microorganism according to claim 35, which is a filamentous fungus.

70. The microorganism according to claim 37 obtained by artificially treating a microorganism which has an ability of intracellularly accumulating a lipid containing fatty acids that have 18 carbons and three or more double bonds or 20 or more carbons and two or more double bonds.

71. The microorganism according to claim 39, wherein said extracellularly secreted lipid is a lipid in which 50% or more is triglyceride.

72. A method of producing a lipid containing unsaturated fatty acids which method comprises culturing the microorganism according to claim 39 in a liquid medium and collecting the lipid from the culture liquid.

73. A method of producing a lipid containing unsaturated fatty acids which method comprises continuously culturing the microorganism according to claim 39 in a liquid medium and then continuously collecting the lipid from the culture liquid.

74. A screening method for determining whether a microorganism has an ability of extracellularly secreting a lipid containing unsaturated fatty acids comprising culturing a microorganism in a transparent liquid medium, and determining whether the culture liquid becomes cloudy.



75. A screening method according to claim 74, wherein the microorganism is selected from genus *Mortierella*.

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76. A screening method wherein strains having a property of extracellularly secreting an unsaturated fatty acid-containing lipid are selected by artificially treating a microorganism having an ability to accumulate the unsaturated fatty acid-containing lipid in the cell, and by culturing the strains obtained on a solid medium to select strains of which colonies are covered with lipid-containing lipid vesicles at the periphery.

77. The screening method according to claim 48, wherein said artificial manipulation is mutation treatment with N-methyl-N'-nitro-N-nitrosoguanidine (NTG).

78. The screening method according to claim 48, wherein said artificial manipulation is mutation treatment, gene manipulation, or cell fusion.

79. A microorganism selected by the screening method according to claim 47.

80. A microorganism selected by the screening method according to claim 48.--

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